

This listing of claims replaces all prior versions, and listings of claims in the instant application:

Listing of Claims:

1. (Currently Amended) A smart card for communication with an electronic device, comprising:

a memory, on said smart card, storing therein (1) an application program; (2) a security manager; and (3) a capabilities list associated with said application program, said capabilities list including information regarding whether access to one or more resources for use by said application program is permitted wherein said capabilities list and said application program constitute a load package received by said smart card; and

a processing unit, on said smart card, for executing said application program and said security manager,

wherein upon said processing unit executing said application and said security manager, and when said executing application requests access to at least one of said one or more resources, said executing security manager selectively grants access to said at least one of said one or more resources for use by said executing application program based at least in part on said information in said capabilities list.

2. (Previously Presented) The smart card of claim 1 wherein said one or more resources comprise at least one of data and functions.

3. (Previously Presented) The smart card of claim 1 wherein said one or more resources comprise one or more resources external to said smart card.

4. (Previously Presented) The smart card of claim 3, further comprising at least one of:

terminal side resources; and
channels of a communications network.

5. (Previously Presented) The smart card of claim 1 wherein said one or more resources comprise one or more resources owned by at least one of said application program and another entity.

6. (Previously Presented) The smart card of claim 5 wherein said other entity comprises at least one of:

an operating system of said smart card; and
another application program.

7. (Previously Presented) The smart card of claim 1 wherein said information in said capabilities list comprises information regarding at least one of:

access rights; and
information required for access to a resource.

8. (Previously Presented) The smart card of claim 1 wherein said capabilities list comprises a first capabilities list and said memory also stores a second capabilities list, said first capabilities list comprising a handle to link to said second capabilities list.

9. (Previously Presented) The smart card of claim 8 wherein said second capabilities list is associated with one or more of other application programs.

10. (Previously Presented) The smart card of claim 1 wherein said application program is for requesting access to a resource.

11. (Previously Presented) The smart card of claim 1 wherein

said application program is for transmitting a resource access request to said security manager; and

said security manager is for transmitting a verify request to a verification program to examine said capabilities list to determine whether said application program is authorized to access said resource, and for performing or denying said requested action based at least in part on said examination.

12. (Previously Presented) The smart card of claim 11 wherein said security manager comprises an application program interface (API).

13. (Previously Presented) The smart card of claim 11 wherein said security manager is for obtaining information regarding said requesting application program through one of inquiring at a context originating the resource access request and a parameter provided with said resource access request.

14. (Previously Presented) The smart card of claim 1, further comprising input/output means for receiving said capabilities list from at least one of a provider of said application program and an owner of said one or more resources.

15. (Cancelled)

16. (Currently Amended) The smart card of claim 1 wherein said smart card device is configured to modify said capabilities list based at least in part on a subsequently received capabilities update list associated with said application program.

17. (Previously Presented) The smart card of claim 1 wherein said smart card is configured to delete said capabilities list or link and access rights upon receiving an instruction to delete said application program from the outside.

18. (Previously Presented) The smart card of claim 1 wherein
said capabilities list is encrypted; and
said processor is configured to decrypt said capabilities list.

19. (Previously Presented) The smart card of claim 1 wherein
said capabilities list is cryptographically signed by at least one of a provider of said application program and an owner of said one or more resources; and
said processor is configured to cryptographically authenticate said capabilities list.

20. (Currently Amended) The smart card of claim 19 wherein said processor is further configured to cryptographically authenticate said capabilities list when said capabilities list is stored on said smart card device.

21. (Previously Presented) The smart card of claim 19 wherein said processor is further configured to cryptographically authenticate said capabilities list when said capabilities list is accessed, said capabilities list being successfully authenticated if a first fingerprint computed over said capabilities list upon storing capabilities list matches a second fingerprint computed over said capabilities list in response to a run-time request to use said capabilities list.

22. (Previously Presented) The smart card of claim 1 wherein said application program comprises a plurality of modules.

23. (Previously Presented) The smart card of claim 1 wherein said application program comprises a Java application program or a Java Card™ applet.

24. (Previously Presented) The smart card of claim 1 wherein said capabilities list is embodied in a tag-length-value (TLV) structure.

25. (Currently Amended) A method for controlling a smart card, the smart card for communication with an electronic device, the method comprising:

receiving, on said smart card, a load package
comprising a capabilities list and an application program;

storing, on said smart card, an~~ansaid~~ application program;

storing, on said smart card, a~~asaid~~ capabilities list associated with said application program, said capabilities list comprising information regarding whether access to one or more resources for use by said application program is permitted; and

executing, on said smart card, said application program and a security manager,

wherein upon said executing application requesting access to at least one of said one or more resources, said ~~exeucting~~executing security manager selectively grants access to said at least one of said one or more resources for use by said application program based at least in part on said information in said capabilities list.

26. (Original) The method of claim 25 wherein said one or more resources comprise at least one of data and functions.

27. (Previously Presented) The method of claim 25 wherein said one or more resources comprise one or more resources external to said smart card.

28. (Previously Presented) The method of claim 27 wherein said smart card further comprises at least one of:
terminal side resources; and
channels of a communications network.

29. (Original) The method of claim 25 wherein said one or more resources comprise one or more resources owned by at least one of said application program and another entity.

30. (Previously Presented) The method of claim 29 wherein said other entity comprises at least one of:
an operating system of said smart card; and
another application program.

31. (Previously Presented) The method of claim 25 wherein said information in said capabilities list comprises information regarding at least one of:
access rights; and
information required for access to a resource.

32. (Previously Presented) The method of claim 25 wherein said capabilities list comprises a first capabilities list and said method further comprises:
storing, on said smart card, a second capabilities list, said first capabilities list comprising a handle to link to said second capabilities list.

33. (Previously Presented) The method of claim 32 wherein said second capabilities list is associated with one or more of other application programs.

34. (Original) The method of claim 25 wherein said executing further comprises said application program requesting access to a resource.

35. (Original) The method of claim 25 wherein said executing further comprises:

said application program transmitting a resource access request to said security manager; and

said security manager transmitting a verify request to a verification program to examine said capabilities list to determine whether said application program is authorized to access said resource, and performing or denying the requested action based at least in part on said examination.

36. (Original) The method of claim 35 wherein said security manager comprises an application program interface (API).

37. (Previously Presented) The method of claim 35 wherein said security manager obtains information regarding said requesting application program through at least one of inquiring at a context originating said resource access request, and a parameter provided with said resource access request.

38. (Original) The method of claim 25, further comprising receiving said capabilities list from at least one of a provider of said application program and an owner of said one or more resources.

39. (Cancelled)

40. (Original) The method of claim 25, further comprising modifying said capabilities list based at least in part on a subsequently received capabilities update list associated with said application program.

41. (Original) The method of claim 25, further comprising deleting said capabilities list or link and access rights upon receiving an instruction to delete said application program from the outside.

42. (Original) The method of claim 25 wherein said capabilities list is encrypted; and said method further comprises decrypting said capabilities list.

43. (Original) The method of claim 25 wherein said capabilities list is cryptographically signed by at least one of a provider of said application program and an owner of said one or more resources; and said method further comprises cryptographically authenticating said capabilities list.

44. (Currently Amended) The method of claim 25, further comprising cryptographically authenticating said capabilities list when said capabilities list is stored on said smart card device.

45. (Original) The method of claim 25, further comprising cryptographically authenticating said capabilities list when said capabilities list is accessed, said capabilities list being successfully authenticated if a first fingerprint

computed over said capabilities list upon storing capabilities list matches a second fingerprint computed over said capabilities list in response to a run-time request to use said capabilities list.

46. (Original) The method of claim 25 wherein said application program comprises a plurality of modules

47. (Original) The method of claim 25 wherein said application program comprises a Java application program or a Java Card™ applet.

48. (Original) The method of claim 25 wherein said capabilities list is embodied in a tag-length-value (TLV) structure.

49. (Currently Amended) A program storage device readable by a machine, embodying a program of instructions executable by the machine to perform a method for controlling a smart card, the smart card for communication with an electronic device, the method comprising:

receiving, on said smart card, a load package
comprising a capabilities list and an application program;

storing, on said smart card, ~~an~~said application program;

storing, on said smart card, said capabilities list associated with said application program, said capabilities list comprising information regarding whether access to one or more resources for use by said application program is permitted; and

executing, on said smart card, said application program and a security manager,

wherein upon said executing application
requesting access to at least one of said one or more

resources, said ~~executing~~executing security manager selectively grants access to said at least one of said one or more resources for use by said application program based at least in part on said information in said capabilities list.

50. (Original) The program storage device of claim 49 wherein said one or more resources comprise at least one of data and functions.

51. (Previously Presented) The program storage device of claim 49 wherein said one or more resources comprise one or more resources external to said smart card.

52. (Previously Presented) The program storage device of claim 51 wherein said smart card further comprises at least one of:

terminal side resources; and
channels of a communications network.

53. (Original) The program storage device of claim 49 wherein said one or more resources comprise one or more resources owned by at least one of said application program and another entity.

54. (Previously Presented) The program storage device of claim 53 wherein said other entity comprises at least one of:

an operating system of said smart card; and
another application program.

55. (Previously Presented) The program storage device of claim 49 wherein said information in said capabilities list comprises information regarding at least one of:

access rights; and

information required for access to a resource.

56. (Previously Presented) The program storage device of claim 49 wherein said capabilities list comprises a first capabilities list and said method further comprises:

storing, on said smart card, a second capabilities list, said first capabilities list comprising a handle to link to said second capabilities list.

57. (Original) The program storage device of claim 56 wherein said second capabilities list is associated with one or more of other application programs.

58. (Original) The program storage device of claim 49 wherein said executing further comprises said application program requesting access to a resource; and

59. (Original) The program storage device of claim 49 wherein said executing further comprises:

said application program transmitting a resource access request to said security manager; and

said security manager transmitting a verify request to a verification program to examine said capabilities list to determine whether said application program is authorized to access said resource, and performing or denying the requested action based at least in part on said examination.

60. (Original) The program storage device of claim 59 wherein said security manager comprises an application program interface (API).

61. (Previously Presented) The program storage device of claim 59 wherein said security manager obtains information

regarding said requesting application program through at least one of inquiring at a context originating said resource access request, and a parameter provided with said resource access request.

62. (Original) The program storage device of claim 49, said method further comprising receiving said capabilities list from at least one of a provider of said application program and an owner of said one or more resources.

63. (Cancelled)

64. (Original) The program storage device of claim 49, said method further comprising modifying said capabilities list based at least in part on a subsequently received capabilities update list associated with said application program.

65. (Original) The program storage device of claim 49, said method further comprising deleting said capabilities list or link and access rights upon receiving an instruction to delete said application program from the outside.

66. (Original) The program storage device of claim 49 wherein

said capabilities list is encrypted; and
said method further comprises decrypting said capabilities list.

67. (Original) The program storage device of claim 49 wherein

said capabilities list is cryptographically signed by at least one of a provider of said application program and an owner of said one or more resources; and

said method further comprises cryptographically authenticating said capabilities list.

68. (Currently Amended) The program storage device of claim 67, said method further comprising cryptographically authenticating said capabilities list when said capabilities list is stored on said smart card device.

69. (Original) The program storage device of claim 67, said method further comprising cryptographically authenticating said capabilities list when said capabilities list is accessed, said capabilities list being successfully authenticated if a first fingerprint computed over said capabilities list upon storing capabilities list matches a second fingerprint computed over said capabilities list in response to a run-time request to use said capabilities list.

70. (Original) The program storage device of claim 49 wherein said application program comprises a plurality of modules.

71. (Original) The program storage device of claim 49 wherein said application program comprises a Java application program or a Java Card™ applet.

72. (Original) The program storage device of claim 49 wherein said capabilities list is embodied in a tag-length-value (TLV) structure.

73. (Currently Amended) An apparatus for controlling a smart card, the smart card for communication with an electronic device, the apparatus comprising:

means for receiving, on said smart card, a load package comprising a capabilities list and an application program;

means for storing, on said smart card, ~~an~~said application program;

means for storing, on said smart card, ~~a~~said capabilities list associated with said application program, said capabilities list comprising information regarding whether access to one or more resources for use by said application program is permitted; and

means for executing, on said smart card, said application program and a security manager,

wherein upon said executing application requesting access to at least one of said one or more resources, said ~~executing~~executing security manager selectively grants access to said at least one of said one or more resources for use by said application program based at least in part on said information in said capabilities list.

74. (Original) The apparatus of claim 73 wherein said one or more resources comprise at least one of data and functions.

75. (Previously Presented) The apparatus of claim 73 wherein said one or more resources comprise one or more resources external to said smart card.

76. (Previously Presented) The apparatus of claim 75 wherein said smart card further comprises at least one of:
terminal side resources; and
channels of a communications network.

77. (Original) The apparatus of claim 73 wherein said one or more resources comprise one or more resources owned by at least one of said application program and another entity.

78. (Previously Presented) The apparatus of claim 77 wherein said other entity comprises at least one of:
an operating system of said smart card; and
another application program.

79. (Previously Presented) The apparatus of claim 73 wherein said information in said capabilities list comprises information regarding at least one of:
access rights; and
information required for access to a resource.

80. (Previously Presented) The apparatus of claim 73 wherein said capabilities list comprises a first capabilities list and said apparatus further comprises:
means for storing, on said smart card, a second capabilities list, said first capabilities list comprising a handle to link to said second capabilities list.

81. (Previously Presented) The smart card of claim 80 wherein said second capabilities list is associated with one or more of other application programs.

82. (Original) The apparatus of claim 73 wherein said means for executing further comprises said means for requesting access to a resource.

83. (Original) The apparatus of claim 73 wherein said means for executing further comprises:
said application program transmitting a resource access request to said security manager; and

said security manager transmitting a verify request to a verification program to examine said capabilities list to determine whether said application program is authorized to access said resource, and performing or denying the requested action based at least in part on said examination.

84. (Original) The apparatus of claim 73 wherein said security manager comprises an application program interface (API).

85. (Original) The apparatus of claim 73 wherein said security manager obtains information regarding said requesting application program through at least one of inquiring at a context originating said resource access request, and a parameter provided with said resource access request.

86. (Original) The apparatus of claim 73, further comprising means for receiving said capabilities list from at least one of a provider of said application program and an owner of said one or more resources.

87. (Cancelled)

88. (Original) The apparatus of claim 73, further comprising means for modifying said capabilities list based at least in part on a subsequently received capabilities update list associated with said application program.

89. (Original) The apparatus of claim 73, further comprising means for deleting said capabilities list or link and access rights upon receiving an instruction to delete said application program from the outside.

90. (Previously Presented) The apparatus of claim 73 wherein

said capabilities list is encrypted; and
said apparatus further comprises means for
decrypting said capabilities list.

91. (Previously Presented) The apparatus of claim 73 wherein

said capabilities list is cryptographically signed by
at least one of a provider of said application program and
an owner of said one or more resources; and
said apparatus further comprises means for
cryptographically authenticating said capabilities list.

92. (Currently Amended) The apparatus of claim 91,
further comprising means for cryptographically authenticating
said capabilities list when said capabilities list is stored on
said smart card device.

93. (Original) The apparatus of claim 91, further
comprising means for cryptographically authenticating said
capabilities list when said capabilities list is accessed, said
capabilities list being successfully authenticated if a first
fingerprint computed over said capabilities list upon storing
capabilities list matches a second fingerprint computed over
said capabilities list in response to a run-time request to use
said capabilities list.

94. (Original) The apparatus of claim 73 wherein said
application program comprises a plurality of modules

95. (Original) The apparatus of claim 73 wherein said
application program comprises a Java application program or a
Java Card™ applet.

96. (Original) The apparatus of claim 73 wherein said capabilities list is embodied in a tag-length-value (TLV) structure.

97. (Cancelled)

98. (Cancelled)

99. (Cancelled).

100. (Cancelled).